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CUCUMBER CULTIVAR EVALUATION TRIALS

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## PICKLING CUCUMBER CULTIVAR EVALUATION TRIALS - 1986

The pickling cucumber cultivar evaluation trials were conducted at the OARDC Vegetable Crops Branch near Fremont. Fifteen cultivars or lines were evaluated in the replicated trial and five cultivars or lines were evaluated in the non-replicated observational trial.

### Cultural Information

The soil is classed as a sandy loam. A broadcast application of 10-20-20 at 750 lbs/A was made and incorporated prior to planting. The plants were seeded on June 13 using a Stan-Hay seeder which seeds 4 to 5 seeds per ft. of row. Plants were thinned at the first true leaf stage to 2 single plants per foot of row. Rows were 30 ft. long on 30-in. centers. One active hive of honeybees was placed in the plot area when the plants started to bloom. All other cultural practices during the growing season were according to standard recommendations. Weed control was excellent and no serious insect problem developed during the season. However, 3.72 in. of rain fell from July 8-12, which resulted in standing water in the plots. The plants were vining and some early blossoms were open on the earliest lines. Pythium infection occurred throughout 2 replications, but was most severe in one replicate, which was not harvested. Cultivar differences were evident and observations on apparent tolerance to the organism were recorded.

The plots were harvested by hand and the cucumbers were graded and sized using a commercial sizer. Fruits were classed into the following sizes and values placed on each size according to the following values:

Size	\$ / Ton*	
	PCIC	OHIO
1. Less than 1 1/6 in.	120	300
2. 1 1/6 to 1 1/2 in.	60	170
3. 1 1/2 to 2 in.	40	90
4. 2 to 2 1/4 in.	20	20

Harvest started on July 25 and continued through August 15.

Growing conditions were generally good throughout the season with normal temperatures, with above normal rainfall in July. Rainfall from planting on June 13 to the end of June was 1.28 in; July rainfall was 5.35 in; rainfall to August 15 was 1.74 in.

Seed companies and others who provided the seed for the trials included: ARCO Seed Co., Brooks, OR; Harris-Moran Seed Co., Mountain View, CA; Department of Horticulture, University of Wisconsin, Madison, WI; Asgrow Seed Co., Kalamazoo, MI; Northrup, King & Co., Gilroy, CA; Ferry-Morse Seed Co., Mountain View, CA; Petoseed Co., Inc., Saticoy, CA; Stokes Seeds, Inc., Buffalo, NY.

\*PCIC values established by the Pickling Cucumber Improvement Committee of Pickle Packers International. Ohio values based upon estimated average prices paid in 1984-85.

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TABLE 1. First harvest yield from replicated trial of Pickling Cucumber Cultivars, 1986.

Line	Source	Lot No.	Size	Tons/A				Total	Culls
				1	2	3	4		
Calypso	Arco Seed	23279/A6120		.85	1.90	.45	.00	3.20	.38
Aurora	Arco Seed	857742		.68	1.02	.37	.00	2.07	.07
Castlehy-2023	Arco Seed	85C11RA,C,D		.79	.98	.32	.08	2.17	.07
ARCO-559	Arco Seed	S23313/A6608		.59	1.09	.59	.06	2.33	.41
ARCO-659	Arco Seed	857755		.96	1.57	.49	.00	3.02	.20
ARCO-797	Arco Seed	857756		1.12	2.22	.87	.00	4.21	.28
PSX-51184	Petoseed	004-154		1.06	2.00	.41	.00	3.47	.44
FMX-4638	Ferry-Morse	----		.56	.27	.00	.00	.83	.00
XPH-1530	Asgrow	VGN-8076		.49	.98	.14	.00	2.44	.12
XPH-1585	Asgrow	VGP-5079		1.03	.84	.40	.00	2.27	.23
XPH-1584	Asgrow	VGP-5077		.73	.27	.00	.00	1.00	.02
County Fair-83	Univ. Wisc.	VGP-254		1.09	1.03	.04	.00	3.16	.15
NVH-1911	Northrup King	38037-05700		.55	.41	.10	.00	1.06	.01
NVH-1901	Northrup King	38037-60400		.55	.90	.33	.00	1.78	.12
		LSD 5%		.397	.605	.405	----	.978	.247

TABLE 2. Yield from replicated trial of Pickling Cucumber Cultivars, 1986.

Line	Yield from 7 Harvest Dates - Tons/A							Total	L/D Ratio		Seed Cavity Size*
	7/25	7/29	8/1	8/5	8/8	8/12	8/15		7/29 Size 2	8/8 Size 2	
Calypso	3.20	4.10	1.89	3.07	1.47	1.87	1.71	17.31	3.20	3.29	=
Aurora	2.07	4.59	1.60	3.70	1.76	2.54	2.35	18.61	2.90	2.98	=
Castlehy-2023	2.17	3.95	1.86	2.86	1.64	2.28	1.37	16.13	2.99	3.16	+
ARCO-559	2.33	2.94	1.27	2.42	1.16	1.42	2.19	13.73	3.03	3.08	+
ARCO-659	3.02	3.79	1.75	3.64	1.68	2.15	1.88	17.91	3.17	3.29	=
ARCO-797	4.21	5.32	2.70	3.66	1.90	2.82	1.77	22.38	3.21	3.25	=
PSX-51184	3.47	3.58	2.32	2.67	1.52	1.84	1.33	16.73	2.87	2.87	+
FMX-4638	.83	3.26	1.52	3.33	1.66	2.57	1.78	14.95	2.78	2.85	=
XPH-1530	2.44	2.60	.98	2.07	1.01	1.65	1.17	11.92	3.15	3.27	=
XPH-1585	2.27	3.12	1.61	2.09	1.24	1.09	1.19	12.61	3.13	3.35	+
XPH-1584	1.00	3.70	1.60	3.37	1.46	2.25	1.61	14.99	3.10	3.30	+
County Fair-83	3.16	3.05	1.41	2.50	1.13	2.09	1.18	14.52	3.11	3.14	=
NVH-1911	1.06	3.46	1.33	2.36	1.37	1.63	2.84	14.05	3.12	3.23	+
NVH-1901	<u>1.78</u>	<u>2.44</u>	<u>1.67</u>	<u>2.02</u>	<u>1.15</u>	<u>1.62</u>	<u>.86</u>	<u>11.54</u>	<u>3.00</u>	<u>3.21</u>	=
LSD .05	.97	1.43	----	----	----	0.84	----	5.25	0.15	0.14	

\* Seed cavity size compared to Carolina: "=" Same size; "+" larger, and "-" smaller.

TABLE 3. Values of harvested cucumbers from Replicated Trial based on PCIC values, 1986.

Line	PCIC Value of 7 Harvest Dates- \$/A							Total
	7/25	7/29	8/1	8/5	8/8	8/12	8/15	
Calypso	234	253	144	188	105	123	122	1171
Aurora	157	256	120	235	141	164	162	1235
Castlehy-2023	168	232	161	193	114	141	91	1100
ARCO-559	161	187	85	146	79	87	133	878
ARCO-659	228	228	119	217	127	139	129	1187
ARCO-797	303	320	192	248	147	165	126	1501
PSX-51184	264	217	156	168	114	108	93	1120
FMX-4638	83	188	101	194	112	170	133	981
XPH-1530	123	167	88	143	84	110	78	793
XPH-1585	190	197	115	141	95	78	85	901
XPH-1584	103	220	120	211	117	147	106	1024
County Fair-83	194	203	104	154	83	133	108	979
NVH-1911	94	209	98	152	97	101	163	914
NVH-1901	133	156	98	127	85	114	68	782
LSD 5%			50					371

TABLE 4. Values of harvested cucumbers from Replicated Trials based on estimated Ohio values, 1986.

Line	Ohio Value of 7 Harvest Dates - \$/A							Total
	7/25	7/29	8/1	8/5	8/8	8/12	8/15	
Calypso	619	655	366	492	268	314	312	3026
Aurora	409	660	307	611	369	429	413	3198
Castlehy-2023	433	590	402	502	294	365	229	2815
ARCO-559	416	482	209	370	200	224	330	2231
ARCO-659	598	576	305	546	319	359	325	3028
ARCO-797	793	817	476	644	382	419	325	3856
PSX-51184	696	564	379	420	288	271	232	2850
FMX-4638	214	472	258	504	278	444	345	2515
XPB-1530	327	435	223	373	210	292	197	2057
XPB-1585	489	514	289	369	241	204	218	1586
XPB-1584	263	575	304	546	295	385	273	2641
County Fair-83	506	522	267	397	215	343	276	2526
NVH-1911	243	546	252	399	252	258	404	2354
NVH-1901	348	405	235	326	222	300	178	2014
LSD 5%				128				963

TABLE 5. First harvest yield from Observational Trial of Pickling Cucumber Cultivars, 1986.

Line	Source	Lot No.	Tons/A				Total	Culls
			Size 1	2	3	4		
PSR-51183	Petoseed	-----	1.07	1.34	.23	.00	2.64	.23
HXP-4494	Harris-Moran	614	.20	.52	.52	.00	1.24	.09
HXP-4490	Harris-Moran	574	1.07	1.57	.41	.12	3.17	.12
HXP-4491	Harris-Moran	584	1.10	1.39	.35	.00	2.84	.06
Spear It	Stokes	141E	1.39	.46	.00	.00	1.85	.03

TABLE 6. Yield for Observational Trial of Pickling Cucumber Cultivars, 1986.

Line	Yield from 7 Harvest Dates - Tons/A							L/D Ratio	Seed Cavity Size*	
	7/25	7/29	8/1	8/5	8/8	8/12	8/15			Total
PSR-51183	2.64	3.57	1.83	2.85	1.92	3.28	2.68	18.77	3.57	+
HXP-4494	1.24	1.19	.38	1.25	.46	.64	.72	5.88	2.74	=
HXP-4490	3.17	3.45	1.36	2.58	1.66	2.64	.70	15.56	2.78	=
HXP-4491	2.84	2.55	2.35	2.03	3.25	2.99	1.25	17.26	2.78	=
Spear It	1.85	4.41	1.83	3.40	1.10	3.46	1.22	17.27	3.07	-

\* Seed cavity size compared to Carolina. "=" same size; "+" larger; "-" smaller.



TABLE 7. Values of harvested cucumbers from Observational Trial based on PCIC values, 1986.

Line	PCIC Value From 7 Harvest Dates \$/A							Total
	7/25	7/29	8/1	8/5	8/8	8/12	8/15	
PSR-51183	218	249	112	202	130	174	136	1221
HXP-4494	76	77	31	76	31	40	42	373
HXP-4490	241	209	102	138	95	158	66	1009
HXP-4491	230	150	119	119	160	185	96	1059
Spear It	195	270	135	238	106	220	97	1260

TABLE 8. Values of harvested cucumbers from Observational Trials based on estimated Ohio values, 1986.

Line	Ohio Value From 7 Harvest Dates \$/A							Total
	7/25	7/29	8/1	8/5	8/8	8/12	8/15	
PSR-51183	570	660	287	528	328	427	312	3112
HXP-4494	196	205	83	196	72	106	101	959
HXP-4490	625	540	259	346	241	403	171	2585
HXP-4491	599	397	285	289	383	478	250	2681
Spear It	497	709	351	609	269	575	247	3257

TABLE 9. Observations on susceptibility of cultivars and lines to Pythium stem rot as a result of flooding of one replication when plants were starting to blossom.

Cultivar or Line*	Rating on 7/22/86
County Fair 83	Appears very tolerant-no plant death
Calypso	Appears tolerant-no plant death
Carolina	Moderately susceptible-few plants dead
ARCO 559	Moderately susceptible-few plants dead
ARCO 659	Slightly tolerant-occasional wilted plant (not dead)
ARCO 797	Highly susceptible-many dead plants
FMX 4638	Moderately susceptible-several dead plants
XPH 1530	Highly susceptible-most plants dead
XPH 1584	Moderately susceptible-several dead plants
XPH 1585	Moderately susceptible-several dead plants
NVH 1901	Susceptible-many dead plants
NVH 1911	Susceptible-many dead plants
PSX 51184	Moderately susceptible-several dead plants
PSR 51183	Appears somewhat tolerant-no dead plants
HXP 4494	Highly susceptible-many dead plants

\*Other cultivars or lines could not be rated because they were out of the severe flooding.

TABLE 10. Descriptive observation of cucumber cultivars and lines.

Cultivar or Line	Description
Calypso	Med. dark green, white spine, stippled, warty, slight blossom-end and stem-end restriction, long.
Carolina	Light green, white spine, stippled, warty, slight blossom-end restriction
Aurora	Med. dark green, white spine, stippled, warty, blocky, looks excellent.
Castlehy-2023	Med. dark green, white spine, stippled, warty, very slight blossom-end restriction, much variation in length.
ARCO 559	Light green, white spine, stippled, warty, med. to severe blossom-end restriction, poor uniformity in shape.
ARCO 659	Light green, white spine, stippled, warty, some blossom-end restriction, looks fair to good, but may be too long.
ARCO 797	Med. dark green, white spine, stippled, warty, some blossom-end restriction, may be too long.
PSX-51184	Light green, white spine, stippled, warty, slight to moderate blossom-end restriction, especially late in season.
FMX-4638	Med. dark green, white spine, stippled, warty, blocky early but moderate to severe blossom-end restriction late in season, may be too short.
XPH-1530	Dark green, white spine, stippled, warty, long but blocky early, severe blossom-end restrictions late in season.
XPH-1585	Med. dark green, white spine, stippled, warty, long but fairly blocky early, but severe end restrictions late in season, poor shape.
XPH-1584	Dark green, white spine, stippled, warty, long with some blossom-end restriction.
County Fair 83	Light green, white spine, stippled, warty, moderate to severe blossom-end restriction.
NVH-1911	Dark green, white spine, slight stippling, warty, fairly block, has promise for a long dark green fruit.
NVH-1901	Med. dark green, white spine some warty and some smooth fruits, slight blossom-end restriction.
PSR-51183	Med. dark green, white spine, very prominent warts, very long, blocky.
HXP-4494	Med. green, white spine, stippled, warty, very short, blocky.
HXP-4490	Med. light green, stippled, warty, very slight blossom-end restriction, warrants another look.
HXP-4491	Med. dark green, white spine, stippled, warty, slight blossom-end restriction, not impressive.
Spear It	Med. dark green, slight stippling, warty, long, tend to be restricted at both ends, not impressive.

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